Aerospace America

Index to AA
Vol. 23, Nos. 1-12

Subjects

AIRCRAFT DESIGN AND OPERATION

High-tech engines outgrow "60-minute twin rule," Jan., p. 14.
Airports, airports—where's the capacity?, Jan., p. 27.
Solving the pilot's wind-shear problem, Mar., p. 82.
Designing an RPV: the Lockheed Aquila, Mar., p. 86.
Joined wing: child of the computer, Apr., p. 70.
NASP termed "all or nothing" concept, May, p. 30.
Designing a V/STOL fighter: McDonnell's AV-8B Harrier, May, p. 88
Taming the deadly spin, June, p. 74.
Is the dogfight dead (again)?, June, p. 22.
Oblique wing ready for research aircraft, June, p. 78.
Aircraft giant steps get Keyworth backing, June, p. 94.
Did safe jet fuel flunk its final exam?, July, p. 46.
Readying technology for a super SST, July, p. 56.
Natural laminar flow hits smoother air, July, p. 60.
C-5B: a giant reborn, July, p. 62.
Romanian aviation: a phoenix rises, July, p. 78.
The metamorphosis of the military aircraft cockpit, Aug., p. 48.
Avtek 400: light is right, Aug., p. 62.
Avionics unreliability turns fighters into shop queens, Aug., p. 68.
Supercruise for a STOL dogfighter, Aug., p. 72.
Flying simulators: almost the real thing, Sept., p. 86.
Tricking the senses in simulators, Sept., p. 92.
Agonies of the Lear Fan, Oct., p. 52.
Powered-lift technology on the threshold, Nov., p. 34.
Simulation world moves up to V/STOLs, Nov., p. 46.
Editorial: Technology transfer: serving the national interest, Nov., p. 6.
1985 Highlights in aeroacoustics, Dec., p. 47.
1985 Highlights in aerodynamic decelerator & balloon technology, Dec., p. 86.
1985 Highlights in air transportation systems, Dec., p. 101.
1985 Highlights in aircraft design, Dec., p. 96.
1985 Highlights in aircraft operations, Dec., p. 59.
1985 Highlights in applied aerodynamics, Dec., p. 43.
1985 Highlights in atmospheric flight mechanics, Dec., p. 71.
1985 Highlights in digital avionics, Dec., p. 52.
1985 Highlights in flight simulation, Dec., p. 36.
1985 Highlights in flight testing, Dec., p. 88.
1985 Highlights in fluid dynamics, Dec., p. 41.
1985 Highlights in general aviation systems, Dec., p. 40.
1985 Highlights in lighter-than-air, Dec., p. 62.
1985 Highlights in V/STOL aircraft systems, Dec., p. 74.
1985 Highlights in sensor systems, Dec., p. 90.

BOOKS

Space and Soviet Military Planning, by Stephen M. Meyer, Jan., p. 130.
The Cold and the Dark, by Paul R. Ehrlich and Carl Sagan, Feb., p. 81.
Normal Accidents, by Charles Perrow, Mar., p. 92.
Takeoff, by Bonnie Tiburzi, Apr., p. 77.
The Pentagon and the Art of War, by Edward N. Luttwak, May, p. 112.
The 1986 Defense Budget, by William W. Kaufmann, June, p. 88.
Japanese Manufacturing Techniques, by Richard J. Schonberger, July, p. 85.
The Knowledge Machine, by Donald Michie and Rory Johnson, Aug., p. 78.
Air Warfare in the Missile Age, by Lon O. Nordeen, Jr., Yeager, by Gen. Chuck Yeager and Leo Janos, Oct., p. 73.
Brotherhood of Arms, by Jacob Goodwin, Nov., p. 66.

CAREER CONCERNS

Going from engineer to manager, Jan., p. 132.
Aerospace retirement security sound, Feb., p. 82.
Going for the gold, Mar., p. 94.
Notebooks: where ideas take shape, Apr., p. 78.
Second-career strategy for military officers, May, p. 114.
The right professional pace, June, p. 90.
Launching minorites into senior management, July, p. 86.
Engineering "crisis" easing, July, p. 92.
Office automation: the vital bugaboo, Aug., p. 80.
The M.S.—that extra edge, Sept., p. 100.

COMMUNICATIONS AND COMPUTERS

Modular computer system cuts spacecraft simulation costs, Jan., p. 82.
Gearing up to the factory of the future, Jan., p. 88.
Why solid modeling?, Jan., p. 94.
Electronic engine "mock-up" shortens design time, Jan., p. 98.
CAD/CAM integration: the imperatives, Jan., p. 102.
NAS: supercomputing master tool for aeronautics, Jan., p. 118.
Wanted: supercomputers for engineering design, Jan., p. 122.
CATS: precursor to aerospace expert systems, Apr., p. 54.
Ada: will DOD's new computer language cut software cost?, Apr., p. 58.
Secure UHF satellite links for the '90s, June, p. 54.
On the phone at 30,000 feet, June, p. 58.
Canadian MSat program moves out, June, p. 62.
Broadening Inmarsat services, June, p. 66.
Designing aircraft on small computers, June, p. 70.
Mobile systems will strain satellite capacity, June, p. 12.
Aerospace mobile communications: building the mass market, June, p. 50.
"Fancy radio" develops split personality, July, p. 66.
Pilots wary of tactical information systems, July, p. 70.
Putting the "super" in supercomputers, Aug., p. 56.
1985 Highlights in communications systems, Dec., p. 76.
1985 Highlights in computer systems, Dec., p. 72.
1985 Highlights in interactive computer graphics, Dec., p. 94.
1985 Highlights in software systems, Dec., p. 44.

DESIGNER'S NOTEBOOK

Robots get 3D vision, Jan., p. 74.
New tricks for cutting drag, Jan., p. 75.
Building 30 lives into the Orbital Transfer Vehicle, Feb., p. 36.
When spacecraft get charged up, they have minds of their own, Feb., p. 38.
Shaving angstroms off the Space Telescope's mirror by computer, Mar., p. 38.
Electroimpulse deicing nears operations, Mar., p. 40.
MIT's man-powered speedster, Apr., p. 28.
Modeling rocket propellant combustion, Apr., p. 30.
Angel's wings from off the shelf, May, 42.
High-density capacitors pack more energy in a smaller space, May, p. 44.
Stall warning: catching it early, June, p. 42.
Every gun a missile launcher, June, p. 44.
A Lantirn for seeing in the dark, July, p. 28.
Giant surveillance radar squeezed into wing, July, p. 29.
The cost of quality, July, p. 32.
Bridesmaid of engines seeks stardom, Aug., p. 26.
Snatching Harrier from the air with Skyhook, Aug., p. 28.
Piezoelectric damping for space structures.
Navigating the highways by satellite, Sept., p. 34.
Propfans gear up, Oct., p. 22.
Gobbling Halley's tail, Oct., p. 26.
A self-repairing aircraft?, Nov., p. 22.
Reserve generator for over-ocean twins, Nov., p. 26.

HISTORY

Out of the Past—Jan., p. 128; Feb., p. 78; Mar., p. 90; Apr., p. 74; May, p. 112; June, p. 87; July, p. 82; Aug., p. 76; Sept., p. 96; Oct., p. 70; Nov., p. 64.

INTERNATIONAL SCENE

Europeans seek "interdependence" in space, Jan., p. 22.
Airbus Industrie backs new technology on A320, Jan., p. 30.
Beefing up Europe's defense commitment, Feb., p. 26.
Japan broadens domestic role in satellite development, Feb., p. 27.
Editorial: Japan's fair share of innovation and creativity, Mar., p. 4.
EFA: teetering edifice or monument to European unity?, Mar., p. 30.
Japanese aerospace: split personality on the mend, Mar., p. 48.
Technology transfer: one-sided investment?, Mar., p. 56.
Japanese aviation: slow takeoff predicted, Mar., p. 60.
Japan's space program: a national priority, Mar., p. 64.
Competition through partnership, Mar., p. 68.
Space: cooperation is the name of the game, Mar., p. 72.
Ariane 5 and Columbus spearhead new ESA program, Apr., p. 24.
China steps out into space, Apr., p. 26.
Japan prepares for helicopter surge, May, p. 37.
Unstable Jaguar proves active controls for EFA, May, p. 34.
Italy and Brazil plan AMX export push, June, p. 32.
Japan eager to develop satcom, June, p. 35.
Japanese aerospace: behind the fan, July, p. 13.
Chinese launch vehicles for sale, July, p. 20.
Romanian aviation: a phoenix rises, July, p. 78.
Hermes: France's winged space messenger to fly in 1995, Aug., p. 13.
Japan takes the robotics spotlight, Aug., p. 18.
Europe hitches ride on space station, Aug., p. 22.
Japanese joint ventures boost U.S. comsats, Aug., p. 24.
Editorial: One world, indivisible, Sept., p. 6.
Space "force de frappe" for France, Sept., p. 17.
Cleaving the Gordian knot: Space Station cooperation, Sept., p. 21.
ATR 42: Franco-Italian regional airliner, Sept.,p. 28.
XT-4: boosting the home market, Sept., p. 30.
Columbus: Europe's piece of the space station, Sept., p. 72.
Geneva: the politics of "what if", Oct., p. 8.
Eurofighters go ahead, somewhat, Oct., p. 20.
Europeans crosseyed over SDI, Nov., p. 20.

MANAGEMENT

Quality: the key to beating foreign competition, Feb., p. 19.
And, oh yes, taxes..., Feb., p. 20.
Industry outlook: even the cripples will walk, Mar., p. 28.
Nelson chairs NASA space panel, Apr., p. 20.
NASA issues technology transfer procedures, Apr., p. 82.
NASA thrown for budget loss, May, p. 27.
Japanese aerospace: behind the fan, July, p. 13.
Productivity: not only more but better, Aug., p. 6.
1985 Highlights in management, Dec., p. 99.

MATERIALS

U.S. slipping on composites, Feb., p. 17.
Heavy-metal fluoride glasses for mid-IR military applications, Apr., p. 66.
National Scene: NASA budget up, but composites and 5th Orbiter out, Apr., p. 14.
New world for aerospace composities, Oct., p. 36.
Filament winding: waking the sleeping giant, Oct. p. 44.
Mining for composites on the Moon, Oct., p. 50.
1985 Highlights in materials, Dec., p. 50.

MEETINGS

The Aerospace Engineering Conference and Show—1985, Jan., p. A-1.
AECS 1985: in pursuit of excellence, May, p. 106.

MILITARY AFFAIRS

New defense directive closes technology transfer loophole, Jan., p. 20.
Military electronics: why so unreliable?, Jan., p. 106.
Designing a cruise missile: General Dynamics' BGM-109 Tomahawk, Jan., p. 110.

Soviet cruise missiles: more, bigger, and better, Feb., p. 12.
Millimeter wave radars raise weapon IQ, Feb., p. 62.
Expanding role for autonomy in military space, Feb., p. 74.
DOD information curbs spread fear and confusion, Mar., p. 76.
Peace talks resume but Soviets are still bearish on SDI, Mar., p. 16.
Defense cuts? Pessimism as thick as molasses, Mar., p. 17.
Editorial: Open skies a fresh challenge, Apr., p. 6.
Expert systems for the military, Apr., p. 40.
Drawing a clear picture of the battlefield, Apr., p. 46.
Demonstrator aircraft debate heats up again, Apr., p. 12.
Soviet bombers: more to come? Apr., p. 16.
Pentagon's feet to the fire, May, p. 14.
SDI presages new space transportation, May, p. 28.
Editorial: Space: sanctuary or menace?, May, p. 6.
Software C3I soft spot, June, p. 10.
SDI: the quintessential bargaining chip, July, p. 50.
Wanted: ground simulator for SDI, July, p. 80.
Salvaging ICBM credibility, July, p. 10.
Nimrod AEW hamstrung, July, p. 24.
Star Wars: feasibility key to policy debate, Aug., p. 38.
Rapid deployment: bane or balm?, Aug., p. 10.
Aspin's defense alternatives, Aug., p. 81.
Biochemical warfare—new no-man's land?, Sept., p. 12.
Star Wars: survivability and stability, Sept., p. 80.
Editorial: The high road to battlefield support, Oct., p. 4.
Star Wars: who wins the cost exchange? Oct., p. 62.
Star Wars: countermeasures and the uses of SDI, Nov., p. 60.
SDI: the risks, Nov., p. 68.
Simulation world moves up to V/STOLs, Nov., p. 46.
Editorial: Technology transfer: serving the national interest, Nov., p. 6.
A tilt to air combat, Nov., p. 16.
1985 Highlights in missile systems, Dec., p. 82.
1985 Highlights in C3I, Dec., p. 66.

PROPULSION AND POWER

Nuclear reactors for space power, Feb., p. 66.
Solar cells for tomorrow's spacecraft, Feb., p. 70.
1985 Highlights in aerospace power systems, Dec., p. 42.
1985 Highlights in air-breathing propulsion, Dec., p. 97.
1985 Highlights in electric propulsion, Dec., p. 84.
1985 Highlights in liquid propulsion, Dec., p. 78.
1985 Highlights in propellants & combustion, Dec., p. 80.
1985 Highlights in solid rockets, Dec., p. 28.

SPACE AND ATMOSPHERIC SCIENCE

Earth's global electric circuit: an unsolved mystery, Jan., p. 124.
Whither Landsat?, Jan., p. 6.
What the Soviets brought to the party, Feb., p. 24.
The track of extraterrestrial life grows warmer, Apr., p. 62.
Two hundred thirty-seven days in Salyut-7, May, p. 96.
U.S., Soviets to discuss Mars on Apollo-Soyuz 10th anniversary, June, p. 28.
Not defaulting on land remote sensing, June, p. 28.
Soviets unveil upcoming deep-space probes, June, p. 92.
Sounding rockets shot from the Shuttle, July, p. 74.
Mars or bust!, Sept., p. 24.
The grand concept for solar terrestrial research, Oct., p. 68.
1985 Highlights in atmospheric environment, Dec., p. 56.
1985 Highlights in life sciences & systems, Dec., p. 37.
1985 Highlights in marine systems & technologies, Dec., p. 100.
1985 Highlights in space sciences and astronomy, Dec., p. 79.
1985 Highlights in space processing, Dec., p. 68.

SPACE SHUTTLE

Shuttle battles the expendables, May, p. 16.
Grooming the Shuttle for cost-effective access to space, May, p. 50.
The Manned Maneuvering Unit: "a nice flying machine," May, p. 56.
EMU: well suited for work in space, May, p. 60.
External tank looks for a new lease on life, May, p. 64.
Ariane vs. the Shuttle: a user's rationale, May, p. 66.
Improving the breed: Shuttle development, May, p. 78.
Spacelab: the multimission machine, May, p. 84.

SPACECRAFT DESIGN AND PLANNING

Four more years: aerospace wins big, Jan., p. 10.
New NASA initiatives pave way for commercial space ventures, Jan., p. 21.
Getting a start on the 21st Century, Feb., p. 6.
Orbit on demand: In this century if pushed, Feb., p. 46.
Orbit on demand: Will cost determine best design?, Feb., p. 50.
Orbit-on-demand vehicles: Mission possible, but one-day turnaround?, Feb., p. 54.
Orbit on demand: Structural analysis finds vertical launchers weigh less, Feb., p. 58.
Deviser: an AI planner for spacecraft operations, Apr., p. 50.
Ariane 5 and Columbus spearhead new ESA program, Apr., p. 24.
Designing communications satellites: Intelsat VI and Aussat, May, p. 92.
Flexibility of space structures makes design shaky, May, p. 100.
Editorial: Riding aerospace's high crest, June, p. 4.
Editorial: Space: only stable market can unleash private funds, July, p. 6.
Toward the fully capable AI space mission planner Aug., p. 44.
Vandenberg Shuttle payload revealed, Oct., p. 12.
ICE probes G-Z comet, Nov., p. 13.
Mars sample return options, Nov., p. 50.
Designing a Mars surface rover, Nov., p. 54.
To kill or not to kill satellites, Nov., p. 10.
1985 Highlights in astrodynamics, Dec., p. 65.
1985 Highlights in ground testing, Dec., p. 34.
1985 Highlights in guidance, navigation, and control, Dec., p. 30.
1985 Highlights in plasmadynamics & lasers, Dec., p. 54.
1985 Highlights in space systems, Dec., p. 26.
1985 Highlights in structural dynamics, Dec., p. 60.
1985 Highlights in structures, Dec., p. 48.
1985 Highlights in support systems, Dec., p. 35.
1985 Highlights in system effectiveness and safety, Dec., p. 45.
1985 Highlights in thermophysics, Dec., p. 97.

SPACE STATION

The space station pie: everyone gets a slice, May, p. 27.
The issue is leadership, Sept., p. 44.
Assembling the basic structure, Sept., p. 50.
A home away from home, Sept., p. 56.
Electric power: photovoltaic or solar dynamic?, Sept., p. 60.
A family of workhorses, Sept., p. 66.

Authors

ADAMS III, GEORGE B. (see DENNING, PETER J.)
ALBERT, J.J.
Mobile systems will strain satellite capacity, June, p. 12.
ALLISON, H. BARD
C-5B: a giant reborn, July, p. 62.
ARINO, NOBUYUKI
Japan's space program: a national priority, Mar., p. 64.
BAILEY, FRANK R.
NAS: supercomputing master tool for aeronautics, Jan., p. 118.
BANKS, PETER M.
Space: only stable market can unleash private funds, July, p. 6.
BARTOLOMEI, F.R. (see FUHRMAN, DEL)
The cost of quality, July, p. 32.
BEECHER, WILLIAM
Peace talks resume but Soviets are still bearish on SDI, Mar., p. 16.
Geneva: the politics of "what if", Oct., p. 8.
BEGGS, JAMES M.
The issue is leadership, Sept., p. 44.
BENSON, JOHAN
New defense directive closes technology transfer loophole, Jan., p. 20.
Quality: the key to beating foreign competition, Feb., p. 19.
NASA issues trechnology transfer procedures, Apr., p. 82.
NASA thrown for budget loss, May, p. 27.
SDI presages new space transportation, May, p. 28.
Aircraft giant steps get Keyworth backing, June, p.94.
SDI: the risks, Nov., p. 68.
BLASCHKE, JAMES C. and JATZEK, HENRY A.
Electronic engine "mock-up" shortens design time, Jan., p. 98.
BOLLENDONK, W.W., McCANDLESS II, B., and WHITSETT, JR., C.E.
The Manned Maneuvering Unit: "a nice flying machine" May, p. 56.
BONASSO, R. PETER (see FRECK, PETER G.)
BOUDREAU, P.M. and BREITHAUPT, R.W
Canadian MSat program moves out, June, p. 62.
BOTTS, THOMAS E. (see FREIWALD, DAVID A.)
BOULTER, THOMAS W.
Why solid modeling?, Jan., p. 94.
BOYER, WILLIAM J. (see HEARTH, DONALD P.)
BRANCH, PAUL (see GHAIS, AHMAD F. et al)
BRAND, VANCE
Improving the breed: Shuttle development, May, p. 78.
BRAUER, FRANK M.
Secure UHF satellite links for the '90s, June, p. 54.
BREITHAUPT, R.W. (see BOUDREAU, P.M.)
BREINER, C.E. (see MACCONOCHIE, I.O. et al)
BROWNING, RONALD, CURTIS, HAROLD O., and REICHERT, HERBERT R.
A family of workhorses, Sept., p. 66.
BUDEN, DAVID
Nuclear reactors for space power, Feb., p. 66.
BUFFALANO, JR., A. CHARLES
Expert systems for the military, Apr., p. 40.
BURKE, DAVID P.
Romanian aviation: a phoenix rises, July, p. 78.
CHANNON, STANLEY L.
U.S. slipping on composites, Feb., p. 17.
CHRISTENSEN, NED
Notebooks: where ideas take shape, Apr., p. 78.
CERETI, FAUSTO
Italy and Brazil plan AMX export push, June, p. 32.
CERRO, J.A. (see TAYLOR, A.H. et al)
CHI, YANG JIA
China steps out into space, Apr., p. 26.
COOK, ANTHONY M.
Simulation world moves up to V/STOLs, Nov., p. 46.
CORMERY, GILBERT
ATR 42: Franco-Italian regional airliner, Sept., p. 28.
COVINGTON, CLARKE, THOMPSON, ROBERT F., and RUBENSTEIN, SEYMOUR Z.
Assembling the basic structure, Sept., p. 50.
CRUDDACE, R., GLAAB, J., FRITZ, G., and SHREWSBERRY, D.
Sounding rockets shot from the Shuttle, July, p. 74.
CRUZ, C.I. (see TAYLOR, A.H. et al)
CURIEL, ALEX DA SILVA (see GHAIS, AHMAD F. et al)
CURTIS, HAROLD O. (see BROWNING, RONALD et al)
DALEY, ED
Unstable Jaguar proves active controls for EFA, May, p. 34.
DAVIS, HARRY I.
Editorial: The high road to battlefield support, Oct., p. 4.
DAVIS, NEIL W.
Japan broadens domestic role in satellite development, Feb., p. 27.
Japanese aerospace: split personality on the mend, Mar., p. 48.
Japan prepares for helicopter surge, May, p. 37.
Japan eager to develop satcom, June, p. 35.
Japanese aerospace: behind the fan, July, p. 13.
Japanese joint ventures boost U.S. comsats, Aug., p. 24.
XT-4: boosting the home market, Sept., p. 30.
DAVIS, RICHARD M.
External tank looks for a new lease on life, May, p. 64.
New world for aerospace composities, Oct., p. 36.
DECKERT, WALLACE H. and FRANKLIN, JAMES A.
Powered-lift technology on the threshold, Nov., p. 34.
DELAUER, RICHARD D.
Technology transfer: serving the national interest, Nov., p. 6.
Reserve generator for over-ocean twins, Nov., p. 26.
DEMEIS, RICHARD
New tricks for cutting drag, Jan., p. 75.
Designing a cruise missile: General Dynamics BGM-109 Tomahawk, Jan., p. 110.
Building 30 lives into the Orbital Transfer Vehicle, Feb., p. 36.
Electroimpulse deicing nears operations, Mar., p. 40.
Designing an RPV: the Lockheed Aquila, Mar., p. 86.

MIT's man-powered speedster, Apr., p. 28.
Joined wing: child of the computer, Apr., p. 70.
Angel's wings from off the shelf, May, p. 42.
Designing a V/STOL fighter: McDonnell's AV-8B Harrier, May, p. 88
Designing communications satellites: Intelsat VI and Aussat, May, p. 92.
Every gun a missile launcher, June, p. 44.
Taming the deadly spin, June, p. 74.
Did safe jet fuel flunk its final exam?, July, p. 46.
Pilots wary of tactical information systems, July, p. 70.
Avtek 400: light is right, Aug., p. 62.
Bridesmaid of engines seeks stardom, Aug., p. 26.
Piezoelectric damping for space structures, Sept., p. 32.
Flying simulators: almost the real thing, Sept., p. 86.
Propfans gear up, Oct., p. 22.
Agonies of the Lear Fan, Oct., p. 52.
DENNING, PETER J. and ADAMS III, GEORGE B.
Wanted: supercomputers for engineering design, Jan., p. 122.
DEROSA, Peter M.
Aerospace retirement security sound, Feb., p. 82.
DENNIS, TOM L.
On the phone at 30,000 feet, June, p. 56.
DOOLING, DAVE
Shuttle battles the expendables, May, p. 16.
The space station pie: everyone gets a slice, May, p. 27.
Vandenberg Shuttle payload revealed, Oct., p. 12.
DREXHAGE, MARTIN G. and EL-BAYOUMI, OSAMA H.
Heavy-metal fluoride glasses for mid-IR military applications, Apr., p. 66.
DRIVER, CORNELIUS (see PETERSEN, RICHARD H.)
EL-BAYOUMI, OSAMA H. (see DREXHAGE, MARTIN G.)
ETHELL, JEFFREY
Is the dogfight dead (again)?, June, p. 22.
Biochemical warfare—new no-man's land? Sept., p. 12.
To kill or not to kill satellites, Nov., p. 10.
EVANS, DAVID D. and GAJEWSKI, RALPH R. (MAJ.-USAF)
Expanding role for autonomy in military space, Feb., p. 74.
FARQUHAR, ROBERT
ICE Probes G-Z comet, Nov., p. 13.
FELDMAN, NATHANIEL E.
Aerospace mobile communications: building the mass market, June, p. 50.
FEOKSTITOV, KONSTANTIN
Two hundred thirty-seven days in Salyut-7, May, p. 96.
FRANKLIN, JAMES A. (see DECKERT, WALLACE H.)
FRECK, PETER G. and BONASSO, R. PETER
Drawing a clear picture of the battlefield, Apr., p. 46.
FREEMAN, WILLIAM T. and STEIN, BLAND A.
Filament winding: waking the sleeping giant, Oct., p. 44.
FREIWALD, DAVID A. and BOTTS, THOMAS E.
Wanted: ground simulator for SDI, July, p. 80.
FRENCH, J. R., NORTON, H. N., and KLEIN, G. A.
Mars sample return options, Nov., p. 50.
FRITZ, G. (see CRUDDACE, R. et al)
FUHRMAN, DEL and BARTOLOMEI, F.R.
The cost of quality, July, p. 32.
GAJEWSKI, RALPH R. (MAJ.-USAF) (see EVANS, DAVID D.)
GHAIS, AHMAD F., BRANCH, PAUL, and CURIEL, ALEX DA SILVA
Broadening Inmarsat services, June, p. 66.
GLICKSTEIN, IRA
The metamorphosis of the military aircraft cockpit, Aug., p. 48.
GODFREY, DAVID E.
Gearing up to the factory of the future, Jan., p. 88.
GOLAND, MARTIN
Japan's fair share of innovation and creativity, Mar., p. 4.
GOLDSWORTHY, W. BRANDT
Mining for composites on the Moon, Oct., p. 50.
GLAAB, J. (see CRUDDACE, R. et al)
GREGORY, TOM
Oblique wing ready for research aircraft, June, p. 78.
GRENANDER, SVEN
Toward the fully capable AI space mission planner, Aug., p. 44.
GREY, JERRY
One world, indivisible, Sept., p. 6.
Mars or bust!, Sept., p. 24.
GUTMAN, W. EDMOND
Aerospace engineering design: the dynamics of progress, Jan., p. A-4.
AECS 1985: in pursuit of excellence, May, p. 106.
HAGER, ROBERT W. (see POWELL, LUTHER E. et al)
HALLINAN, GEORGE J. (see THOMAS, RONALD L. et al)
HAMMER, ROBERT H.
Going from engineer to manager, Jan., p. 132.
HANLEY, ARTHUR
A tilt to air combat, Nov., p. 16.
HARFORD, JAMES J.
Europeans seek "interdependence" in space, Jan., p. 22.
What the Soviets brought to the party, Feb., p. 24.
U.S., Soviets to discuss Mars on Apollo-Soyuz 10th anniversary, June, p. 28.
Chinese launch vehicle for sale, July, p. 20.
HEARTH, DONALD P. and BOYER, WILLIAM J.
Flexibility of space structures makes design shaky, May, p. 100.
HENDERSON III, FREDERICK B.
Not defaulting on land remote sensing, June, p. 28.
HIEATT, JAMES L. (see THOMAS, RONALD L. et al)
HOFFMAN, ANDREW J.
EMU: well suited for work in space, May, p. 60.
HOLMES, BRUCE J.
Natural laminar flow hits smoother air, July, p. 60.
HOMATAS, GREGORY E.
Japan takes the robotics spotlight, Aug., p. 18.
ILES, PETER A. and LING, K.S.
Solar cells for tomorrow's spacecraft, Feb., p. 70.
INTRILIGATOR, DEVRIE S.
The grand concept for solar terrestrial research, Oct., p. 68.
JACKSON, L.R. (see TAYLOR, A.H. et al)
JACKSON, RICHARD H.
CAD/CAM integration: the imperatives, Jan., p. 102.
JATZEK, HENRY A. (see BLASCHKE, JAMES C.)
JEFFERSON, PAT
New NASA initiatives pave way for commercial space ventures, Jan., p. 21.
Nelson chairs NASA space panel, Apr., p. 20.
Engineering "crisis" easing, July, p. 92.
Aspin's defense alternatives, Aug., p. 81.
KLEIN, G. A. (see FRENCH, J. R.)
KURODA, TAKAJI
Competition through partnership, Mar., p. 68.
LANGEREUX, PIERRE
Hermes: France's winged space messenger to fly in 1995, Aug., p. 13.
Space "force de frappe" for France, Sept., p. 17.

Index to Advertisers

Aerojet Techsystems Company.....8-9
Aerospace Corporation.....109
Anser.....107
Arizona State University.....108
Beech Aircraft.....85
Blackbird International.....22
Boeing Technology Services.....64
Boeing Vertol.....110
British Aerospace Electronic Systems Division.....16
Brush Wellman, Incorporated.....18
Calay Systems.....24-25
Charles Stark Draper Labs.....108
Drexel University.....106,110
Garrett Corporation.....2nd Cover, 17
General Dynamics Convair Div.....69
Harris Aerospace Systems Division...4-5
Humphrey.....81
IBM-FSD.....92-93
Inco Alloys International.....15
Inmarsat.....46
Integrated Systems.....58
International Technology Underwriters.....49
Judge, Incorporated.....110
Lockheed Corporation.....57
Lockheed California Company.....87
LTV Aerospace and Defense Company, Vought Aero Systems Division.4th Cover
McDonnell Douglas.....61,70,89
Metal Bellows Corporation.....19
Microcraft, Incorporated.....10
MKS Instruments.....51
Motorola GEG.....112
National Research Council.....22
Ohio State University.....110
Oklahoma State University.....106
Pittsburgh-Des Moine Corporation.....1
Purdue University.....108
RCA Astro-Electronics.....7,13
Rexnord Specialty Fastener Division.....32-33
Rockwell International.....63
San Diego State University.....00
Scanivalve Corporation.....67
Space Test, Incorporated.....107
Sperry Corporation.....3rd Cover
Syracuse University.....108
Systron Donner.....21
Tex-Tech.....14
Titeflex Corporation.....20
TRW.....111
TRW Electronics and Defense.....23
United States Information Agency....107
United Technologies-CSD.....38-39
University of California, Los Angeles.....107,110
University of California, Irvine.....107
West Virginia University.....110
Wyle Laboratories.....11

AEROSPACE AMERICA
ADVERTISING HEADQUARTERS
1633 Broadway
New York, N.Y. 10019
212 / 581-4300

Michael P. Buckley
Associate Publisher, Advertising

Craig Byl
Advertising Production Manager

Sales Offices

East Coast: Joseph C. Brown Jr., 1633 Broadway, New York, N.Y. 10019, 212 / 581-4300; **South:** Roger Kelton, The Kelton Group, P.O. Box 28412, Atlanta, GA. 30328, 404/252-6510; **West Coast:** Norman C. Hill, 5001 Airport Plaza Drive, Long Beach, Calif. 90815, 213 / 429-0127; **Midwest:** Jeanne McConnell, The Farley Company, 35 E. Wacker Drive, Chicago, Ill. 60601, 312 / 346-3074; **Recruitment Advertising:** Patricia Herman, 321 S.E. 3rd Terrace, Deerfield Beach, Fla. 33441, 305 / 427-5454; **France, Germany, Italy, Spain, Switzerland:** Robert Broekman, American Publishers Representatives, Inc., L'Avant Seine, 4, rue Robert de Flers, 75015 Paris, France, 4609-9595, Telex: 270560; **Benelux, Scandinavia, United Kingdom:** David Todd and Leigh Gould, David Todd Associates, 115 Camberwell Road, London, SE5 OHB, England, 01-703-6207, Telex: 893202; **Asia:** Warren E. Ball, Saiko Takasugi, Intercontinental Marketing Corp., IPO Box 5056, Tokyo 100-31, Japan, 03-667-7397, Cable: INTERMARKET TOKYO.

LEMESSURIER, ROBERT W. (see TALAY, THEODORE A. et al)
LERNER, ERIC J.
Robots get 3D vision, Jan., p. 74.
Military electronics: why so unreliable?, Jan., p. 106.
Millimeter wave radars raise weapon IQ, Feb., p. 62.
Shaving angstroms off the Space Telescope's mirror by computer, Mar., p. 38.
When spacecraft get charged up, they have minds of their own, Feb., p. 36.
DOD information curbs spread fear and confusion, Mar., p. 76.
Modeling rocket propellant combustion, Apr., p. 30.
Ada: will DOD's new computer language cut software cost?, Apr., p. 58.
High-density capacitors pack more energy in a smaller space, May, p. 44.
Designing communications satellites: Intelsat VI and Aussat, May, p. 92
Stall warning: catching it early, June, p. 42.
Designing aircraft on small computers, June, p. 70.
A Lantirn for seeing in the dark, July, p. 28.
Giant surveillance radar squeezed into wing, July, p. 29.
"Fancy radio" develops split personality, July, p. 66.
Star Wars: feasibility key to policy debate, Aug., p. 38.
Avionics unreallability turns fighters into shop queens, Aug., p. 68.
Snatching Harrier from the air with Skyhook, Aug., p. 28.
Navigating the highways by satellite, Sept., p. 34.
Star Wars: Survivability and stability, Sept., p. 80.
Tricking the senses in simulators, Sept., p. 92.
Gobbling Halley's tail, Oct., p. 26.
Star Wars: who wins the cost exchange?, Oct., p. 62.
A self-repairing aircraft?, Nov., p. 22.
The debate over strategic defense: Part IV, countermeasures and the uses of SDI, Nov., p. 60.
LINDBERG, GARRY M.
Canadarm stretches Shuttle reach, May, p. 70.
LING, K.S. (see ILES, PETER A.)
LOGSDON, JOHN M.
Cleaving the Gordian knot: Space Station cooperation, Sept., p. 21. (National Scene)
LOHMAN, ROBERT L.
Spacelab: the multimission machine, May, p. 84.
LOVELACE, ALAN M.
Editorial: Riding aerospace's high crest, June, p. 4.
Editorial: Productivity: not only more but better, Aug., p. 6.
LYONS, MICHAEL T.
Ariane vs. the Shuttle: a user's rationale, May, p. 66.
MACCONOCHIE, I.O., BREINER, C.E., MACKLEY, E.A., MORRIS, S.J., PHILLIPS, W.P. and SCOTTI, S.J.
Will cost determine best design?, Feb., p. 50.
MACKLEY, E.A. (see MACCNOCHIE, I.O. et al)
MANGUM, WILLIAM T.
Going for the gold, Mar., p. 94.
MARTIN, JAMES A.
In this century if pushed., Feb., p. 46.
MCCANDLESS II, B. (see BOLLENDONK, W.W. et al)
McCOWN, JAMES W. (see POWELL, LUTHER E. et al)
MCLUCAS, JOHN L.
Editorial: Whither Landsat?, Jan., p. 6.
Editorial: Open skies a fresh challenge, Apr., p. 6.
Editorial: Space: sanctuary or menace?, May, p. 6.
MOORE, JESSE W.
Grooming the Shuttle for cost-effective access to space, May, p. 50.
MORRIS, W. DOUGLAS (see TALAY, THEODORE A. et al)
MORRIS, S.J. (see MACCONOCHIE, I.O., et al)
NAFTEL, J.C. (see TAYLOR, A.H. et al)
NORTON, H. N. (see FRENCH, J. R.)
OBERG, JAMES E.
Soviets unveil upcoming deep-space probes, June, p. 92
OWEN, KENNETH
Airbus Industrie backs new technology on A320, Jan., p. 30.
Beefing up Europe's defense commitment, Feb., p. 26.
EFA: teetering edifice or monument to European unity?, Mar., p. 30.
Ariane 5 and Columbus spearhead new ESA program, Apr., p. 24.
Europe hitches ride on space station, Aug., p. 22.
Eurofighters go ahead, somewhat, Oct., p. 20.
Europeans crosseyed over SDI, Nov., p. 20.
PETERSEN, RICHARD H. and DRIVER, CORNELIUS
Readying technology for a super SST, July, p. 56.
PHILIPPAKOS, TASSOS
Industry outlook: even the crippies will walk, Mar., p. 28.
PHILLIPS, W.P. (see MACCONOCHIE, I.O. et al)
PIANTELLA, PAOLO (see VALLERANI, ERNESTO)
POLMAR, NORMAN
Soviet cruise missiles: more, bigger, and better, Feb., p. 12.
Demonstrator aircraft debate heats up again, Apr., p. 12.
Soviet bombers: more to come?, Apr., p. 16.
PONNAMPERUMA, CYRIL
The track of extraterrestrial life grows warmer, Apr., p. 62.
POPE, ALAN
And, oh yes, taxes...Feb., p. 20.
PORITZKY, S.B.
Airports, airports—where's the capacity?, Jan., p. 27.
POWELL, LUTHER E., HAGER, ROBERT W., and McCOWN, JAMES W.
A home away from home, Sept, p. 56.
RAYMER, DANIEL P.
Supercruise for a STOL dogfighter, Aug., p. 72.
RECHTIN, EBERHARDT
The right professional pace, June, p. 90.
REICHERT, HERBERT R. (see BROWNING, RONALD et al)
RREPIC, R.A. (see TICE, S.E.)
ROBLE, RAYMOND G.
Earth's global electric circuit: an unsolved mystery, Jan., p. 124.
RUBENSTEIN, SEYMOUR Z. (see CONVINGTON, CLARKE et al)
RUOFF, CARL, WILCOX, BRIAN, and KLEIN, G. A.
Designing a Mars surface rover, Nov., p. 54.
SCHAUFELE, ROGER D.
The M.S.—that extra edge, Sept., p. 100. Aerospace Careers
SCHLESINGER, JAMES R.
SDI: the quintessential bargaining chip, July, p. 50.
SCHULBACH, CATHERINE
Putting the "super" in supercomputers, Aug., p. 56.
SHREWSBERRY, D. (see CRUDDACE, R. et al)
SCOTTI, S.J. (see MACCONOCHIE, I.O. et al)
SIMMONS, HENRY
Four more years: aerospace wins big, Jan., p. 10.
Defense cuts? Pessimism as thick as molasses, Mar., p. 17.
Pentagon's feet to the fire, May, p. 14.
Software C3I spot, June, p. 10.
Salvaging ICBM credibility, July, p. 10.
Rapid deployment: bane or balm?, Aug., p. 10.
SIMPSON, THEODORE
NASA budget up, but composites and 5th Orbiter out, Apr., p. 14.
SMITH, DAVID I.
CATS: precursor to aerospace expert systems?, Apr., p. 54.
SMITH, HERBERT
Second-career strategy for military officers, May, p. 114.
Launching minorities into senior management, July, p. 86.
STEIN, BLAND A. (see FREEMAN, WILLIAM T.)
STEINER, JOHN E.
Getting a start on the 21st Century, Feb., p. 6.
STENGEL, ROBERT F.
Solving the pilot's wind-shear problem, Mar., p. 82.
SWIHART, JOHN M.
High-tech engines outgrow "60-minute twin rule". Jan., p. 14.
TALAY, THEODORE A., MORRIS, W. DOUGLAS, and LEMESSURIER, ROBERT W.
Mission possible, but one-day turnaround?, Feb., p. 54.
TAYLOR, A.H., CERRO, J.A., CRUZ, C.I., JACKSON, L.R., NAFTEL, J.C., and WURSTER, K.E.
Structural analysis finds vertical launchers weigh less, Feb., p. 58.
THOMAS, RONALD L., HALLINAN, GEORGE J., and HIEATT, JAMES L.
Electric power: photovoltaic or solar dynamic?,Sept., p. 60.
THOMPSON, ROBERT F. (see CONVINGTON, CLARKE et al)
TICE, S.E., ZELON, J.L., and REPIC, R.A.
Modular computer system cuts spacecraft simulation costs, Jan., p. 82.
UCHINO, KENJI
Japanese aviation: slow takeoff predicted, Mar., p. 60.
UDA, HIROSHI
Space: cooperation is the name of the game, Mar., p. 72.
VALLERANI, ERNESTO and PIANTELLA, PAOLO
Columbus: Europe's piece of the Space Station, Sept., p. 72.
VELANDER, WALLACE E.
Office automation: the vital bugaboo, Aug., p. 80-
VERE, STEVEN A.
Deviser: an AI planner for spacecraft operations, Apr., p. 50.
WARREN, KENNETH
Nimrod AEW hamstrung, July, p. 24.
WATANABE, OSAMU
Technology transfer: one-sided investment?, Mar., p. 56.
WHITSETT, JR., C.E. (see BOLLENDONK, W.W. et al)
WILCOX, BRIAN (see RUOFF, CARL)
WURSTER, K.E. (see TAYLOR, A.H. et al)
ZELON, J.L. (see TICE, S.E.)

Career Opportunities

AEROSPACE ENGINEERING: OKLAHOMA STATE UNIV.

Assistant or Associate Professor to teach at undergraduate and graduate levels, and develop research in one or more of these areas: composites, solid mechanics, aerodynamics, propulsion, CAD/CAM, dynamic systems and control. Ph.D. or equivalent experience. Resume and references to Dr. Karl N. Reid, Prof. and Hd., Sch. of Mech. and Aerospace Eng., OSU, Stillwater, OK 74076 EO/AA employer.

DREXEL UNIVERSITY, PHILADELPHIA

Due to expanded activities, Drexel University has immediate tenure-track openings in the Department of Mechanical Engineering and Mechanics for teaching in the general areas of:

(1) Thermal Fluid Science with emphasis in either experimental or analytical aspects of heat transfer, thermodynamics, fluid mechanics, or combustion;
(2) Dynamic Systems and Control with emphasis in dynamic systems modeling and simulation, and control theory;
(3) Mechanics and Structures with emphasis in either experimental or analytical aspects of composite materials, nondestructive testing, structural dynamics, classical mechanics, or biomechanics;
(4) CAD/CAM with manufacturing experience preferred.

A Ph.D. is required and applicants should have some experience with funded research efforts. Positions require undergraduate and graduate teaching activity with research responsibilities. Rank and salary will be commensurate with candidates qualifications. Drexel University is an Equal Opportunity/Affirmative Action Employer. Applications are especially welcome from women and minority candidates.

Send complete resume including personal data, education, research and professional experience, publications, and the names of three references to:

Professor N.P. Cernansky, Acting Chairman
Department of Mechanical Engineering and Mechanics
Drexel University
32nd and Chestnut Streets
Philadelphia, PA 19104